

WHAT IS CLAIMED IS:

1 1. A system for intensity control of a pixel having 2^N
2 gray-scale tones, comprising:

3 a pixel having 2^s subpixels, two of the subpixels with
4 the lowest light output having a light output ratio of about
5 1:1; and

6 a driver to apply a pulse-width modulated waveform to the
7 subpixels, the modulated waveform having 2^{N-s} pulses of
8 different pulse widths.

1 2. The system of claim 1, the least-significant pulse
2 width and the next-to-the-least-significant pulse width each
3 have a width of $2^s/N$.

1 3. The system of claim 2, the least-significant pulse
2 width being applied to a one of the two subpixels with the
3 lowest light output to obtain a first gray-scale tone.

1 4. The system of claim 2, the next-to-the-least-
2 significant pulse width being applied to the two subpixels
3 with the lowest light output to obtain a second gray-scale
4 tone.

1 5. The system of claim 2, the least-significant pulse
2 width being applied to a one of the two subpixels with the

3 lowest light output and the next-to-the-least-significant
4 pulse width being applied to the two subpixels with the lowest
5 light output to obtain a third gray-scale tone.

1 6. The system of claim 1, the 2^s subpixels being
2 concentric.

1 7. A system for intensity control of a pixel,
2 comprising:

3 a first subpixel;

4 a second subpixel, the first subpixel and the second
5 subpixel having a light output ratio of about 1:1; and

6 a driver to apply a pulse-width modulated waveform to the
7 first subpixel and the second subpixel, the modulated waveform
8 having a first pulse and a second pulse, the first pulse being
9 applied to the first subpixel and the second pulse being
10 applied to the first subpixel and the second subpixel.

1 8. The system of claim 7, the first pulse and second
2 pulse being of about equal width.

1 9. The system of claim 8, the modulated waveform having
2 a third pulse being about twice the width of the first pulse,
3 the third pulse being applied to the first subpixel and the
4 second subpixel.

5 10. The system of claim 8, the first pulse and second
6 pulse being of unequal amplitude

7 11. The system of claim 7, the first subpixel and the
8 second subpixel being concentric.

1 12. A method of intensity control of a pixel,
2 comprising:

3 applying a first pulse with a first width to a first
4 subpixel of the pixel to produce a first gray-scale tone; and
5 applying a second pulse with the first width to the first
6 subpixel and a second subpixel of the pixel to produce a
7 second gray-scale tone.

1 13. The method of claim 12 further comprising applying
2 the first pulse to the first subpixel and the second pulse to
3 the first subpixel and the second subpixel to produce a third
4 gray-scale tone.

1 14. The method of claim 12 further comprising applying a
2 third pulse with a second width about twice the first width to
3 the first subpixel and the second subpixel to produce a fourth
4 gray-scale tone.

1 15. The method of claim 12 further comprising applying
2 the first pulse to the first subpixel and a third pulse with a

3 second width about twice the first width to the first subpixel
4 and the second subpixel to produce a fifth gray-scale tone.

1 16. A system for intensity control of a pixel,
2 comprising:

3 a pixel; and

4 a driver to apply a pulse-width and amplitude modulated
5 waveform to the pixel, the modulated waveform having at least
6 two pulses of different pulse widths, a first one of the at
7 least two pulses having a first width and a first amplitude
8 and a second one of the at least two pulses having about the
9 first width and a second amplitude greater than the first
10 amplitude, the first pulse being applied to the pixel to
11 produce a first gray-scale tone and the second pulse being
12 applied to the pixel to produce a second gray-scale tone.

1 17. The system of claim 16, the first pulse and the
2 second pulse being applied to the pixel to produce a third
3 gray-scale tone.

1 18. The system of claim 16, the modulated waveform
2 having a third pulse being about twice the width of the first
3 pulse and twice the amplitude of the first pulse, the third
4 pulse being applied to the pixel to produce a fourth gray-
5 scale tone.

1 19. The system of claim 16, the second one of the at
2 least two pulses having the second amplitude about twice the
3 first amplitude.

1 20. A method of intensity control of a pixel,
2 comprising:
3 applying a first pulse with a first width and a first
4 amplitude to the pixel to produce a first gray-scale tone; and
5 applying a second pulse with the first width and a second
6 amplitude of about twice the first amplitude to the pixel to
7 produce a second gray-scale tone.

1 21. The method of claim 20 further comprising applying
2 the first pulse and the second pulse to the pixel to produce a
3 third gray-scale tone.

1 22. The method of claim 20 further comprising applying a
2 third pulse with a second width about twice the first width
3 and the second amplitude to the pixel to produce a fourth
4 gray-scale tone.